

IN THE CLAIMS:

1. (currently amended) A staircase system comprising:
at least one rail element;
a plurality of stair elements;
a plurality of baluster elements coupled to said at least one rail element and to
said plurality of stair elements, said at least one rail element supporting said plurality of
baluster elements which extend from said at least one rail element and in turn also
support said plurality of stair elements; and
a center support system comprising a plurality of telescoping elements, said center
support system being coupled to and supporting said at least one rail element and said
plurality of stair elements, said center support system having a stowed state and a
deployed state, wherein when in the deployed state said center support system is extended
and said plurality of stair elements are helically oriented thereabout.
2. (original) A system as in claim 1 wherein said at least one rail element is in
the form of a potential energy device.
3. (original) A system as in claim 1 wherein said at least one rail element assists
in contracting said center support system into said stowed state.
4. (original) A system as in claim 1 wherein said at least one rail element assists
said center support system into said deployed state.
5. (original) A system as in claim 1 wherein said at least one rail element is
formed of at least one material selected from aluminum, steel, and a composite material.
6. (original) A system as in claim 1 wherein said plurality of stair elements
comprise:
a plurality of outer edges; and
a plurality of radial edges.

7. (original) A system as in claim 6 wherein said plurality of outer edges substantially form a circle when said center support system is in said stowed state.
8. (original) A system as in claim 6 wherein said plurality of radial edges comprise straight radial edges.
9. (original) A system as in claim 6 wherein said plurality of radial edges comprise curved radial edges.
10. (original) A system as in claim 1 wherein said plurality of stair elements comprise at least one staging stair element.
11. (original) A system as in claim 10 wherein said staging stair element is at a fixed height for human standing clearance.
12. (original) A system as in claim 10 wherein said staging stair element is in the form of a step.
13. (original) A system as in claim 1 wherein said plurality of baluster elements are in the form of potential energy devices.
14. (original) A system as in claim 1 wherein said plurality of baluster elements assist in contracting said center support system into said stowed state.
15. (original) A system as in claim 1 wherein said plurality of baluster elements assist said center support system into said deployed state.
16. (original) A system as in claim 1 wherein said plurality of baluster elements are formed of at least one material selected from aluminum, steel, and a composite material.

17. (original) A system as in claim 1 wherein said plurality of baluster elements are in a curved state when said center support system is in said stowed state.

18. (original) A system as in claim 1 wherein said plurality of baluster elements are in a substantially straight state when said center support system is in said deployed state.

19. (original) A system as in claim 1 wherein said plurality of baluster elements are in a nesting arrangement when said center support system is in said stowed state.

20. (original) A system as in claim 1 wherein said at least one rail element, said plurality of stair elements, and said plurality of baluster elements form a disk-shaped structure when said center support system is in said stowed state.

21. (original) A system as in claim 20 wherein said disk-shaped structure has a cross-sectional height of less than approximately two inches.

22. (original) A system as in claim 1 wherein said center support system telescopes between said stowed state and said deployed state.

23. (cancelled)

24. (cancelled)

25. (withdrawn) A system as in claim 1 wherein said center support system comprises a plurality of ribbon coil structures coupled together by a plurality of interlocking elements.

26. (withdrawn) A system as in claim 25 wherein said plurality of ribbon coil structures and said plurality of interlocking elements form a helically wound tubular structure when said center support system is in said deployed state.

27. (withdrawn) A system as in claim 1 wherein said center support system comprises a plurality of truss elements.

28. (withdrawn) A system as in claim 27 wherein said plurality of truss elements are in a triangular arrangement when said center support system is in said deployed state.

29. (original) A system as in claim 1 wherein said at least one rail element, said plurality of stair elements, said plurality of baluster elements, and said center support system are stowable in a ceiling.

30. (original) A system as in claim 1 wherein said at least one rail element, said plurality of stair elements, said plurality of baluster elements, and said center support system are stowable in a floor.

31. (original) A system as in claim 1 further comprising a deployment mechanism coupled to said center support system.

32. (original) A system as in claim 31 wherein said deployment mechanism comprises: a deployment handle coupled to said center support system; and at least one release mechanism releasing said center support system.

33. (original) A system as in claim 1 further comprising a locking system maintaining position of said plurality of stair elements and said center support system.

34. (original) A method of accessing an overhead area comprising:
releasing a staircase system;
deploying said staircase system comprising extending a telescoping center support system of said staircase system;
ascending a plurality of circular stair elements of said staircase system; and
interacting with the overhead area.

35. (original) A method as in claim 34 wherein deploying said staircase system comprises helically orienting said plurality of circular stair elements about said telescoping center support system.

36. (currently amended) An overhead space access stowable spiral staircase system comprising:

at least one circular rail element;
a plurality of stair elements, each of said plurality of stair elements having a plurality of circular outer edges edge;

a plurality of baluster elements coupled to said at least one rail element and to said plurality of stair elements; and

a center support system coupled to and supporting said at least one rail element and said plurality of stair elements, said center support system having a stowed state and a deployed state;

wherein when in the deployed state, said center support system is extended and said plurality of stair elements are helically oriented thereabout.

37. (original) A system as in claim 36 wherein said at least one circular rail element, said plurality of stair elements, said plurality of baluster elements, form a disk-shaped structure when said center support system is in said stowed state.

38. (currently amended) An aircraft comprising:

an aircraft structure having at least one overhead area; and

a staircase system comprising;

at least one rail element;
a plurality of stair elements;
a plurality of baluster elements coupled to said at least one rail element and to said plurality of stair elements, said at least one rail element supporting said plurality of baluster elements which extend from said at least one rail element and in turn also support said plurality of stair elements; and

a center support system coupled to and supporting said at least one rail element and said plurality of stair elements, said center support system having a stowed state and a deployed state, wherein when in the deployed state, said center support system is extended and said plurality of stair elements are helically oriented thereabout;

 said center support system when in said deployed state providing access to said overhead area.

39. (original) An aircraft as in claim 38 wherein said staircase system is stowable into a ceiling.

40. (original) An aircraft as in claim 38 wherein said staircase system is stowable into a floor.

41. (new) A staircase system comprising:
at least one rail element;
a plurality of stair elements;
a plurality of baluster elements coupled to said at least one rail element and to said plurality of stair elements, said at least one rail element supporting said plurality of baluster elements which extend from said at least one rail element and in turn also support said plurality of stair elements; and
 a center support system comprising a plurality of telescoping elements, said center support system being coupled to and supporting said at least one rail element and said plurality of stair elements, said center support system having a stowed state and a deployed state, wherein said plurality of telescoping elements comprise a plurality of slot receptacles for position guidance of a plurality of stair element slot coupling members when transitioning between said stowed state and said deployed state and wherein when in the deployed state said center support system is extended and said plurality of stair elements are helically oriented thereabout.